# APFO Task Force Downtown Columbia Requirements



**Howard County Department of Public Works** 

# APFO Task Force Downtown Columbia Requirements

# **APFO Revisions**

- February 1, 2010, the Howard County Council adopted Bill 58-2009 amending the 2000 General Plan for the purpose of revitalizing and redeveloping Downtown Columbia
- Specifically, amend certain existing regulations to establish a more urban level of service standard for evaluating all Countycontrolled intersections serving Downtown Columbia

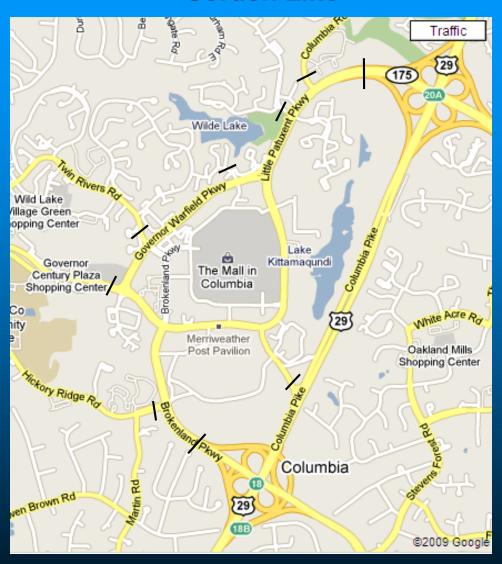
# **APFO Revisions**

- Design Manual III, Chapter 4, Adequate Public Facilities Test Evaluation Requirements was revised. Revisions consisted of adding Section 4.9 that specifically addresses development within Downtown Columbia consistent with the General Plan Amendment.
- Section 4.9, Requirements allows for Critical Lane Volume Level of Service (CLV LOS) standard at intersections to increase from 1450 to 1600 before mitigation is required. The increase is subject to a transitional phasing that allows the standard to rise incrementally and transportation improvements to pace new development.

# **APFO Revisions**

- Additionally, other elements to the current roads test were introduced:
  - revising the project Impact Area to capture downstream traffic effects
  - a Queuing Analysis to test each affected intersection in the Impact Area,
  - Pedestrian and Bicycle Level of Service tests for the area surrounding a project, and a Transportation Demand Management statement to address alternate means of mobility
  - County to conduct independent traffic monitoring study every 5 years to validate generalized findings and assumptions included in the developers' traffic studies.

# Downtown Columbia Cordon Line



## 4.9 REQUIREMENTS – DOWNTOWN COLUMBIA

#### 4.9.1. **EVALUATION REQUIREMENTS**

A. The developer is required to submit a project construction phasing and anticipated occupancy schedule that will be the basis for establishing the test years and the schedule for the completion of any required mitigation. Construction or implementation of improvements in the mitigation plan must appropriately coincide with the phasing and occupancy schedule.

## 4.9 REQUIREMENTS - DOWNTOWN COLUMBIA

#### 4.9.1. **EVALUATION REQUIREMENTS**

#### B. 1. MINIMUM TRIP THRESHOLD

ALL NEW DEVELOPMENTS IN DOWNTOWN COLUMBIA PROJECTED TO GENERATE 20 OR MORE NET PEAK HOUR TRIPS MUST SUBMIT A TRAFFIC STUDY.

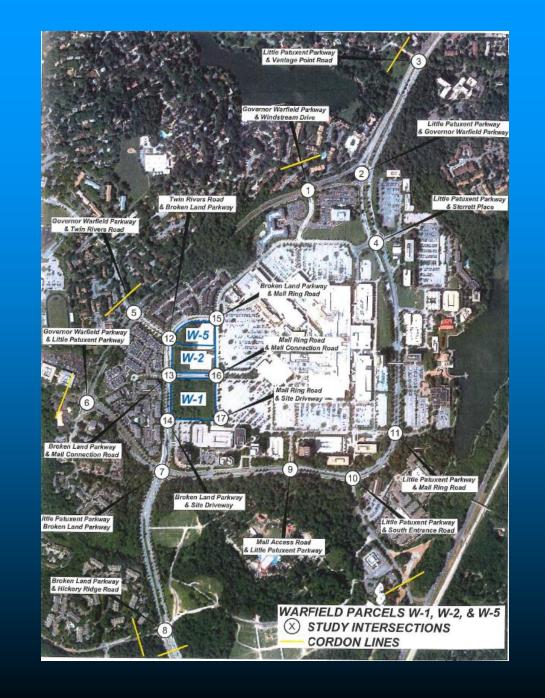
DEVELOPMENTS PROJECTED TO GENERATE LESS THAN 20 NET PEAK HOUR TRIPS MAY BE REQUIRED TO SUBMIT A TRAFFIC STUDY IF THE EXISTING CRITICAL LANE VOLUME (CLV) AT THE TEST INTERSECTION IS GREATER THAN CLV 1500.

#### B.2. IMPACT AREA

AT A MINIMUM, THE TRAFFIC STUDY SHALL DETERMINE THE CLV OF THE NEAREST INTERSECTION IN ALL DIRECTIONS AND THE NEXT CLOSEST SIGNALIZED INTERSECTIONS IN ACCORDANCE WITH TABLE 1 BELOW.

Table 1 - Signalized Intersections to be included in the traffic study

NET PEAK HOUR SITE TRIPS	MINIMUM NUMBER OF SIGNALIZED INTERSECTIONS IN EACH DIRECTION
20 – 100	1
101 – 500	2
501 – 800	3
801 – 1500	4
>1500	5



#### **B.3. Intersection Standards**

The intersection standard within the Cordon Line, as defined in Section 4.9.5., shall not exceed CLV 1600 for the overall intersection. This standard is subject to a transitional CLV requirement. During the transition phase to CLV 1600, all Downtown intersection testing and mitigation will be subject to the following:

(A) ALL DOWNTOWN INTERSECTIONS MUST BE <u>EVALUATED AND</u>, <u>IF NECESSARY</u>, MITIGATED PER SECTION 4.9.2 USING AN INITIAL CLV OF 1500.

#### B.3.A. Intersection Standards

(1) In the event the sum of existing and projected background traffic volumes (Total Projected Background Traffic) result in a CLV exceeding 1500 before the addition of site generated Net Peak Hour Trips, then the acceptable CLV standard for mitigation at the subject intersection will be the CLV as determined by Total Projected Background Traffic.

#### **B.3.A.** Intersection Standards

- (2) IF IT IS DETERMINED BY DPZ/DPW THAT:
  - (I) AN INTERSECTION CANNOT BE IMPROVED TO THE APPLICABLE CLV STANDARD AS DESCRIBED ABOVE OR,
  - (II) THE PROPOSED IMPROVEMENT TO ATTAIN THE APPLICABLE CLV STANDARD DOES NOT SATISFY THE DESIGN BALANCE AS FURTHER DISCUSSED IN SECTION 4.9.2 OR
  - (III) MITIGATION OF THE INTERSECTION TO THE APPLICABLE CLV STANDARD WOULD REQUIRE THE CONSTRUCTION OF AN IMPROVEMENT WHICH DPZ, IN CONSULTATION WITH DPW, FINDS NOT TO BE NECESSARY TO MAINTAIN AN INTERSECTION CLV OF NO MORE THAN 1600 AT THE TIME OF FULL BUILD-OUT OF THE DOWNTOWN COLUMBIA PLAN,

#### B.3.A. Intersection Standards

THEN, THE APPLICABLE CLV STANDARD WILL INCREASE BY INCREMENTS OF 50 UNTIL THE CONDITIONS IDENTIFIED IN BOTH (I) AND (II) ABOVE ARE NO LONGER TRUE.

THEREAFTER, THE ADJUSTED INTERSECTION CLV WILL THEN BECOME THE NEW ACCEPTED CLV STANDARD FOR THAT INTERSECTION AND WILL BE USED AS THE INITIAL CLV FOR SUBSEQUENT EVALUATIONS OF THAT INTERSECTION UNDER PARAGRAPHS (A)(1) AND (2) OF THIS SUBSECTION, 4.9.1.B.3.

B.3.B IN NO CASE SHALL THE INCREMENTAL ADJUSTMENT OF THE INTERSECTION CLV EXCEED 1600

#### **B.4 QUEUING ANALYSIS TEST**

In addition to a CLV test at applicable intersections, a queuing analysis shall also be performed on all approaches of the same intersections, and shall include left turn and through movements. Queue length shall be calculated during the weekday peak hours using the procedures found in the appendix. For signalized intersection spacing greater than 300 feet, the queue shall not exceed 80 percent of the distance between signalized intersections. For signalized intersection spacing less than 300 feet, the queue shall not exceed more than 90 percent of the distance to an adjacent signalized intersection.

IF THE QUEUE EXCEEDS THE SPECIFIED STANDARD, THEN IT SHALL BE TREATED AS INSUFFICIENT CAPACITY AND MUST BE ADDRESSED UNDER THE MITIGATION PLAN.



Figure 5—4 Background Critical Queues



#### **B.5** TRAFFIC VOLUMES

SITE-GENERATED PEAK HOUR TRIPS SHALL BE ESTIMATED BASED ON THE LATEST EDITION OF TRIP GENERATION, PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) OR TRIP GENERATION STUDIES APPROVED BY HOWARD COUNTY STAFF. NET PEAK HOUR TRIPS ARE DEFINED AS SITE-GENERATED TRIPS MINUS APPROPRIATE REDUCTIONS FOR INTERNAL TRIPS, NON-AUTO TRIPS (I.E., TRANSIT, BIKE, WALKING, AND/OR OTHER NON-AUTO TRIPS), TRANSPORTATION DEMAND MANAGEMENT (TDM) TRIP REDUCTIONS, AND PASS-BY/DIVERTED-LINK TRIPS IN ACCORDANCE WITH THE REFERENCES CITED ABOVE.

#### C. Pedestrian and Bicycle Level of Service

ALL NEW DEVELOPMENTS MUST SATISFY A PEDESTRIAN LEVEL OF SERVICE (PLOS) NO LESS THAN PLOS C. AND A BICYCLE LEVEL OF SERVICE (BLOS) NO LESS THAN BLOS C FOR ANY STUDY SEGMENT IDENTIFIED AS A BICYCLE ROUTE ON THE BICYCLE AND PEDESTRIAN CIRCULATION PLAN IN THE DOWNTOWN COLUMBIA PLAN OR A COUNTY APPROVED BICYCLE PLAN. THE STUDY MUST EVALUATE EXISTING AND PROPOSED SIDEWALKS, CROSSINGS AND BICYCLE FACILITIES ALONG THE STUDY SEGMENT.

THE PEDESTRIAN LEVEL OF SERVICE (PLOS) AND BICYCLE LEVEL OF SERVICE (BLOS) SHALL BE CALCULATED AS SHOWN IN THE APPENDIX. HOWEVER, IF IT IS THE FINDING OF DPZ/DPW THAT (i) A REASONABLE ALTERNATIVE BICYCLE OR PEDESTRIAN ROUTE EXISTS OR IS PROPOSED, OR (ii) MEETING THE BLOS OR PLOS STANDARD WOULD NEGATIVELY IMPACT THE BLOS, PLOS, OR THE DESIGN BALANCE AS FURTHER DISCUSSED IN SECTION 4.9.2, THEN THE BLOS OR PLOS TEST, AS APPROPRIATE, IS DEEMED SATISFIED.

#### D. TRANSPORTATION DEMAND MANAGEMENT STATEMENT

A Transportation Demand Management (TDM) Statement shall be provided with each traffic study. The statement will discuss appropriate TDM strategies for the development program planned in the FDP or SDP, how they may be implemented, and how the proposed selected strategies would complement any current Downtown Transportation Demand Management Plan developed under Section 2.4 of the Downtown Columbia Plan.

#### D. TRANSPORTATION DEMAND MANAGEMENT STATEMENT

THE STATEMENT SHOULD ALSO DISCUSS PAST INITIATIVES, AND STRATEGIES TO REDUCE AUTOMOBILE TRAVEL AND PROMOTE ALTERNATIVE MEANS OF MOBILITY TO AND FROM THE PROPOSED DEVELOPMENT.

IT WILL ENCOURAGE ALTERNATIVE MEANS OF MOBILITY THROUGH PROMOTIONAL INCENTIVES AND PROGRAMS, TRANSIT CONTRIBUTIONS SUCH AS CONTRIBUTIONS TO A CIRCULATOR SYSTEM, NEW BUS ROUTES, HIGHER FREQUENCY OF SERVICE AND IMPROVED STOPS AND SERVICE INFORMATION, ENHANCEMENTS TO THE CONNECTIONS BETWEEN DOWNTOWN COLUMBIA AND THE VILLAGE CENTERS AND AREAS OUTSIDE OF DOWNTOWN COLUMBIA,

INCLUDING TRANSIT RIGHT-OF-WAYS, OFF-SITE BICYCLE AND PEDESTRIAN FACILITIES IMPROVEMENTS OR OTHER MEASURES. THE SCALE OF THE TDM STATEMENT SHALL REFLECT THE NUMBER OF TRIPS GENERATED BY THE DEVELOPMENT AND THE REMAINING CAPACITY OF THE TRANSPORTATION FACILITY.

In order to obtain Departmental approval, the mitigation plan shall address the findings of the vehicle, pedestrian and bicycle level of service tests as well as the inclusion of the TDM statement. All mitigation plans are required to incorporate a <u>design balance</u> between safety, mobility, modes of transportation, scale and character of the surrounding area, aesthetics, and the County General Plan.

IF IT IS THE FINDING OF THE DIRECTORS OF PLANNING AND ZONING AND PUBLIC WORKS THAT A PROPOSED MITIGATION PLAN DOES NOT SATISFACTORILY ADDRESS THE DESIGN BALANCE DESCRIBED ABOVE THEN THE COUNTY RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO THE PROPOSED MITIGATION PLAN.

ALSO, THE DEVELOPER SHALL BE REQUIRED TO SUBMIT A PHASING AND COMPLETION SCHEDULE. IMPLEMENTATION OF IMPROVEMENTS IN THE MITIGATION PLAN MUST APPROPRIATELY COINCIDE WITH THE SIGNIFICANT MILESTONES IN THE PHASING AND COMPLETION SCHEDULE THAT REQUIRED THE MITIGATION.

A. MITIGATION OPTIONS: WHEN ANALYSIS OF AN INTERSECTION INDICATES CLV VALUES EXCEEDING THE REQUIREMENTS OF SECTION 4.9.1.B.3: INTERSECTION STANDARD, THE DEVELOPER SHALL REVISE THE PROJECT AS INDICATED BY THE FOLLOWING.

#### 1. Roadway/Intersection Mitigation Plan

DEVELOP A MITIGATION PLAN FOR THE INTERSECTION(S) THAT WILL INCREASE THE CAPACITY ON ROAD FACILITIES IN THE IMPACT AREA SO THAT THE LEVEL OF SERVICE AFTER CONSTRUCTION OF THE PROJECT WILL BE EQUAL TO OR BETTER THAN THE LEVEL OF SERVICE/CLV REQUIRED UNDER SECTION 4.9.1.B.3.

MITIGATION MEANS FULL FUNDING OF IMPROVEMENTS BY THE DEVELOPER, APPROVED BY THE DEPARTMENT, TO OFF-SITE ROAD FACILITIES. MITIGATION MEASURES MAY INCLUDE ANY INTERSECTION CAPACITY IMPROVEMENT EXCEPT GRADE-SEPARATED ROADWAYS AND RAMPS WITHIN INTERSECTIONS, OR IMPROVEMENTS TO THROUGH LANES OF ROADS CLASSIFIED AS INTERMEDIATE ARTERIALS OR HIGHER. PLEASE NOTE THE FOLLOWING:

(a) EXISTING TRAFFIC SIGNAL MODIFICATION: THE DEVELOPER IS REQUIRED TO OBTAIN ADVANCE APPROVAL FROM THE AGENCY RESPONSIBLE FOR THE EXISTING TRAFFIC SIGNAL MAINTENANCE PRIOR TO PROPOSING MODIFICATION TO A SIGNAL AS A MITIGATION MEASURE.

#### (B) GRADE SEPARATION:

- (1) CONSTRUCTION OF A THIRD GRADE-SEPARATED INTERCHANGE ON ROUTE 29 SHALL NOT BE REQUIRED TO ACHIEVE A CLV OF LESS THAN 1600.
- (2) When grade-separated roadways or arterial through lane improvements are the only viable mitigation alternatives, full mitigation will not be required by the Developer but may be provided. If full mitigation is not provided then final Department signature of the approved site development plan will not occur until:

(B) GRADE SEPARATION CONT.:

- (3) THE PROJECT IS FULLY FUNDED IN THE APPROVED
  CAPITAL BUDGET WITH CONSTRUCTION INITIATING WITHIN 3
  YEARS AFTER BUDGET APPROVAL AND
- (4) A MAJOR FACILITIES AGREEMENT HAS BEEN EXECUTED OUTLINING THE IMPROVEMENT COST SHARE, COMPARATIVE CONSTRUCTION SCHEDULES BETWEEN THE IMPROVEMENT AND THE DEVELOPMENT PROJECT, AND OTHER TERMS AND CONDITIONS AS APPLICABLE BETWEEN THE PARTIES.

(B) GRADE SEPARATION CONTINUED:

THE TIME FRAME TO REACH THE MAJOR FACILITIES AGREEMENT WILL BE 3 YEARS FROM THE DATE OF THE SITE DEVELOPMENT PLAN SUBMISSION. IF AN AGREEMENT CANNOT BE EXECUTED WITHIN THAT TIME THEN ANY OF THE FOLLOWING MAY BE CONSIDERED:

- (i) A 1-YEAR EXTENSION MAY BE GRANTED,
- (ii) TERMS OF THE AGREEMENT MAY BE MUTUALLY MODIFIED BY THE PARTIES,
- (iii) A MODIFIED SITE DEVELOPMENT PLAN MAY BE SUBMITTED,
- (IV) THE SITE DEVELOPMENT PLAN CAN BE WITHDRAWN WITHOUT PREJUDICE

#### 2. Non-Automobile Trip Credits

IN ORDER TO ENHANCE PEDESTRIAN SAFETY AND TO ENCOURAGE TRANSIT AND BICYCLE USE, TRIP CREDITS ARE ALLOWED IF A DEVELOPER IMPROVES AN EXISTING OR PROVIDES A NEW NON-**AUTOMOBILE (PEDESTRIAN, BICYCLE, TRANSIT OR TRANSPORTATION** DEMAND MANAGEMENT) FACILITY OR PROGRAM NOT OTHERWISE REQUIRED ACCORDING TO TABLE 2. USE OF THE TRIP CREDITS AND DETERMINATION OF THE AMOUNT WITHIN A RANGE OF THE CREDIT IS AT THE DISCRETION AND APPROVAL OF THE DEPARTMENT OF PLANNING AND ZONING AS DEEMED TO PROMOTE MOBILITY TO, IN AND AROUND THE DOWNTOWN AREA.

## TABLE 2: NON-AUTOMOBILE TRIP CREDITS

Non- Automobile Transportation Facility	TRIP CREDIT/PER PEAK HOUR TRIP
100 LINEAR FEET OF OFF-SITE FIVE-FOOT WIDE SIDEWALK	5
100 LINEAR FEET OF OFF-SITE EIGHT-FOOT WIDE BIKE PATH	5
OFF-SITE CURB EXTENSION/PEDESTRIAN REFUGE ISLAND/ HANDICAP RAMP	2
OFF-SITE ACCESSIBLE PEDESTRIAN PUSHBUTTONS (SET OF TWO EACH LEG)	3
OFF-SITE COUNTDOWN PEDESTRIAN SIGNAL HEAD (SET OF TWO EACH LEG)	3
OFF-SITE SIGNALIZED PEDESTRIAN CROSSWALK (INCLUDES APS, COUNTDOWN HEADS, PAVEMENT MARKINGS EACH LEG)	7
BIKE RACK (SET OF 8)	2
Bus Shelter	3
INFORMATION KIOSK	2
BIKE LOCKERS (SET OF 8)	3
REAL-TIME TRANSIT INFORMATION SIGN	2
STATIC TRANSIT INFORMATION SIGN	0.5
Shuttle or Bus	5-15
Bus pullout	3
MAXIMUM TRIP CREDITS	50

- 3. PROJECT SCOPE REDUCTION
- 4. PROJECT SCHEDULE DEFERMENT

#### B. Special Considerations

- 1. Shared Developer Mitigation Plan
  - (A) WHEN TWO OR MORE DEVELOPERS ARE PROPOSING SEPARATE MITIGATION PLANS FOR THE SAME NON-GRADE SEPARATED INTERSECTION OR NON-ARTERIAL THROUGH LANE, THE DEPARTMENT SHALL COLLECT FROM EACH DEVELOPER THE PROPORTIONATE COST OF THE IMPROVEMENTS CORRESPONDING TO THE DEVELOPMENT'S PROPORTION OF THE CRITICAL MOVEMENTS IN THE INTERSECTION. THE FUNDS COLLECTED WILL SATISFY THE DEVELOPER'S OBLIGATION TO MITIGATE THE AFFECTED INTERSECTION. THESE FUNDS WILL BE PROGRAMMED INTO A FUTURE CAPITAL PROJECT FOR THE PURPOSE OF MITIGATING TRAFFIC GENERATED BY THE MULTIPLE PROJECTS AT THE TEST INTERSECTIONS. HOWEVER, FINAL APPROVAL OF THE SITE DEVELOPMENT PLAN WILL NOT OCCUR UNTIL:

#### **B.1.A Special Considerations Continued:**

- (1) THE PROJECT IS FULLY FUNDED IN THE APPROVED CAPITAL BUDGET WITH CONSTRUCTION INITIATING WITHIN 3 YEARS AFTER BUDGET APPROVAL, AND.
- (2) A MAJOR FACILITIES AGREEMENT HAS BEEN EXECUTED OUTLINING THE IMPROVEMENT COST SHARE, COMPARATIVE CONSTRUCTION SCHEDULES BETWEEN THE IMPROVEMENT AND THE DEVELOPMENT PROJECT, AND OTHER TERMS AND CONDITIONS AS APPLICABLE BETWEEN THE PARTIES.

#### B. 1. A.2. Special Considerations Continued:

THE TIME FRAME TO REACH THE MAJOR FACILITIES AGREEMENT WILL BE 3 YEARS FROM THE DATE OF THE SITE DEVELOPMENT PLAN SUBMISSION. IF AN AGREEMENT CANNOT BE EXECUTED WITHIN THAT TIME, THEN ANY OF THE FOLLOWING MAY OCCUR:

- (I) A 1-YEAR EXTENSION MAY BE GRANTED,
- (II) TERMS OF THE AGREEMENT MAY BE MUTUALLY MODIFIED BY THE PARTIES,
- (III) A MODIFIED SITE DEVELOPMENT PLAN MAY BE SUBMITTED,
- (IV) THE SITE DEVELOPMENT PLAN MAY BE WITHDRAWN WITHOUT PREJUDICE.

#### B. 1. B. Special Considerations Continued:

ALTERNATIVELY, DEVELOPERS OF MULTIPLE PROJECTS MAY JOINTLY PROPOSE A MITIGATION PLAN FOR PURPOSES OF MEETING THE ADEQUATE ROAD TEST REQUIREMENT. EACH MITIGATION PLAN MUST INDICATE THE PARTICIPANTS IN THE PLAN; WHICH PARTICIPANT(S) WILL BE RESPONSIBLE FOR IMPLEMENTING THE PLAN AND CONSTRUCTING ANY REQUIRED TRANSPORTATION IMPROVEMENT; AND HOW THE TRANSPORTATION CAPACITY TO BE CREATED WILL BE APPORTIONED AMONG THE PLAN PARTICIPANTS.

#### 4.9.4. MONITORING

THE COUNTY WILL CONDUCT INDEPENDENT TRAFFIC MONITORING STUDIES EVERY 5 YEARS. THE FIRST MONITORING STUDY WILL OCCUR 5 YEARS AFTER SUBMISSION OF THE FIRST SUBDIVISION PLAN (FDP) FOR THE DOWNTOWN COLUMBIA AREA. THE FINAL STUDY WILL BE ISSUED AS SPECIFIED IN THE HOWARD COUNTY CODE. THE DATE THE STUDY IS ISSUED WILL BE THE ISSUANCE DATE FOR PURPOSES OF SECTION 4.6 TRANSITIONAL REQUIREMENTS AND SECTION 4.8, APPROVAL REQUIREMENTS.

THE MONITORING STUDIES WILL BE A COMPREHENSIVE ASSESSMENT OF EXISTING TRANSPORTATION FACILITIES WITHIN THE DOWNTOWN COLUMBIA AREA. THE PURPOSE OF THE MONITORING STUDY WILL BE TO VALIDATE AND/OR RECALIBRATE PROJECTIONS MADE IN THE REDEVELOPMENT TRAFFIC STUDY (SEPTEMBER 2008 COLUMBIA TOWN CENTER GENERALIZED TRAFFIC STUDY) AND/OR SUBSEQUENT STUDIES SUBMITTED WITH FUTURE SUBDIVISION FINAL DEVELOPMENT PLANS AND/OR SITE DEVELOPMENT PLANS, AND THAT FORM THE BASIS OF THE PROPOSED DEVELOPMENT PROGRAM. REFER TO SECTIONS 4.6 AND 4.8 THE APPLICATION OF THE MONITORING STUDY TO THE FDP AND SDP SUBMITTAL PROCESS.

# Questions?